

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D. C. 20554

In the Matter of	)	ET Docket No. 02-98
	)	
Amendment of Parts 2 and 97 of the	)	
Commission's Rules to Create a Low	)	RM-9404
Frequency allocation for the Amateur	)	
Radio Service	)	
	)	
Amendment of Parts 2 and 97 of the	)	
Commission's Rules Regarding an	)	RM-10209
Allocation of a Band near 5 MHz for the	)	
Amateur Radio Service	)	
	)	
Amendment of Parts 2 and 97 of the	)	
Commission's Rules Concerning the	)	RM-9949
Use of the 2400-2402 MHz Band by the	)	
Amateur and Amateur-Satellite Services	)	

**DONALD B. CHESTER, K4KYV**  
**REPLY TO COMMENTS**

In reply to comments by:

Doug Dunn, K7YD  
Theodore E Drake  
Adam M. Farson, AB4OJ  
George Pritchard

**DRAKE, FARSON and DUNN advocate the prohibition of double-sideband amplitude modulation (A3E) in the proposed 5.25-5.40 mHz amateur band by limiting the maximum bandwidth of a signal to the approximate bandwidth of SSB (J3E).**

Reasons given for this restriction are the "wideband nature" of AM signals in today's "crowded bands", and that since this band is being proposed to ensure reliable emergency communication, it should be restricted to "spectrum-efficient" modes.

This assertion is irreconcilable with the basis and purpose of the Amateur radio service as expressed in section 97.1 of the rules. One of the fundamental purposes of amateur radio is to provide emergency communication as stated in section 97.1 (a), and one of the primary justifications for the

proposed 5.25-5.40 MHz amateur allocation is to improve the reliability of emergency communication. Nevertheless, the Commission has not proposed the new band exclusively for this purpose. Amateur radio exists also to allow experimentation and self-instruction in the radio art. In the absence of emergency situations, amateur communication is largely recreational, and because of its unimportance, restricting modes of emission for the purpose of "communications efficiency" is not warranted. Other fundamental purposes of amateur radio described in section 97.1 (b), (c) and (d) can best be achieved by allowing amateurs the widest practicable variety of emission modes for experimentation, self-instruction and recreational communication.

During a bona fide emergency, the Commission may designate spot frequencies or narrow segments of bands for emergency use, and issue temporary orders prohibiting routine operation on those frequencies. For example, 3 kHz segments of the 3.5 and 7 MHz bands were recently set aside for emergency communications related to flooding in central Texas. In the 43 years I have been licensed, I do not recall more than a small portion of a band ever being temporarily set aside. The use of AM and NBFM along with other modes for day-to-day amateur operation would not affect the reliability of the proposed new band for emergency communication. Furthermore, events leading to emergency communication via amateur radio occur so infrequently as not to warrant special restrictions on routine day-to-day operation.

Regarding crowded band conditions, the HF bands are less congested today than two decades ago, despite a substantial increase in the number of amateur licensees. One likely reason for this apparent decline is widespread use of VHF and UHF FM and repeaters, which have largely replaced HF for voice communication within the local area. More recently, e-mail and electronic bulletin boards over the internet have emerged as a popular form of two-way personal communication, taking away time that many amateur licensees might otherwise spend on the air. The Commission did not find it justifiable to restrict AM and other wideband modes in the past when the HF bands were more congested, and there is no reason why such a prohibition would be warranted today. While the proposed 5.25-5.4 MHz band might become crowded during certain "prime-time" hours, especially if amateurs choose to use this spectrum for contests, prohibition of wider bandwidth modes such as AM and NBFM would bring at most, negligible relief.

**DRAKE, PRITCHARD, DUNN and others propose subbands in the proposed 5 MHz allocation, but fail to address the issue of**

**underutilisation of spectrum.** The factor that contributes the most to the present-day congestion on the HF amateur bands in the United States is the complex subband structure that exists in this country. Because of subband restrictions, during prime operating hours, certain portions of each band tend to become very congested, while other portions remain virtually unoccupied. Long term monitoring has shown that the frequencies used for CW/digital communication tend to become heavily congested only during CW contest periods, which occur several times a year. Usually, CW contest activity extends from the low-frequency edge of the amateur band and upwards only about 75 kHz, despite the fact that CW is permitted throughout each amateur band. During peak hours, the voice subbands frequently become so congested that operation is difficult because of the interference. During SSB contests, non-contest operation may become virtually impossible.

On 22-23 June 2002, I closely monitored the amateur bands during the annual ARRL-sponsored "Field Day" activity. Field Day is unique in that all authorized modes are used simultaneously, unlike other contests that limit operation to one mode, usually CW or SSB. No activity was heard on the 1.8 MHz band because of atmospheric static, and due to poor propagation conditions on 28-29.7 MHz, little activity was heard. The 10, 18 and 24 MHz bands have been voluntarily declared by the amateur community off-limits to contesting. The 3.5, 7, 14 and 21 MHz bands were monitored during their prime propagation periods of the day, when the heaviest contest activity would be expected.

In each band a similar pattern was observed: approximately the lower 75 kHz was heavily occupied with CW activity with the highest congestion on the lower 50 kHz. Each voice subband was extremely congested throughout its frequency range and this included some non-Field Day activity. Despite heavy occupancy, the spectrum lying between the lowest 75 kHz segment of each band, and the low-frequency edge of the voice subband, was virtually unoccupied, with fewer than a half-dozen non-Morse digital signals such as RTTY and PSK-31 at any one time. In the Novice portions of the 3.5, 7 and 21 MHz bands no more than a five or six CW signals were observed at any one time. A substantial number of non-US phone stations were heard on 7075-7100 and 14100-14150 kHz, and a few Canadian phones were heard on 3725-3750. 7100-7300 kHz was of limited use because of heavy interference from international broadcasters throughout the evening hours.

This situation exists throughout the year during peak propagation periods on the most widely used HF amateur bands. CW stations operate comfortably in the lower portions of their allotted spectrum (with little congestion

except during contest periods) while the phone subbands regularly become so congested that voice operation is difficult at best. In between, a substantial portion of spectrum lies virtually unoccupied, except for a few non-Morse digital stations and a small amount of CW activity mostly confined to the Novice subbands. Foreign amateur and non-amateur signals may be present, using SSB and other modes. The fact that large segments of the most congested bands remain virtually unoccupied by U.S. stations clearly indicates inefficient use of amateur allocations.

Volunteer band plans agreed upon by the amateur community would be preferable to government-mandated subbands. As operating modes come and go in popularity, it is much easier to modify voluntary band plans than to go through the cumbersome rulemaking process to change subband allocations. For example, amateur use of digital data modes may become more widespread as the technology is developed, but it would be a waste of spectrum to hold portions of the amateur frequencies "in reserve" for their speculative use sometime in the indeterminate future, as some commenters have suggested. Other commenters say that voluntary band plans do not work because a small minority of amateurs refuses to cooperate. Under the existing rules, the Commission has the power to enforce voluntary band plans in cases where uncooperative licensees knowingly and persistently cause harmful interference. Section 97.101(a) states that amateurs must operate their stations in accordance with good amateur practice, and 97.101(b) states that amateur operators must cooperate in selecting transmitting channels and in making the most effective use of the amateur frequencies. Just as the Commission has converted over to administration of amateur radio examinations by volunteers, the amateur service can likewise convert to voluntary band plans to resolve mutual interference between narrowband and wideband modes. The commenters' arguments for subbands, by mode or by licence class, are unpersuasive.

**Comments by DUNN and others advocate limiting power on the proposed 5.25-5.4 MHz band to approximately 200 watts.**

Although most commenters do not explain why they want special power restriction, some assert that since amateurs would use this band on a shared secondary basis, special power restriction would reduce the likelihood of interference to the primary users. On shared bands, amateur stations, regardless of transmitting power, are required to avoid frequencies occupied by primary users. Shared bands work by proper choice of frequency, not by restricting transmitting power while operating at or near the same frequencies as primary stations. Amateurs have successfully shared the 1900-2000 kHz band on a secondary basis with full power privileges for nearly two decades, and I am not aware of a single incident of harmful interference caused by amateurs to the Radiolocation service. On the other hand,

during a declared emergency, full output power may be necessary to carry out vital communications, particularly during natural disasters when heavy thunderstorm static may render HF communication difficult. Furthermore, full power operation in the proposed new band would encourage amateurs to increase their degree of technical knowledge and expertise by building amplifiers or modifying existing ones to cover the new frequencies.

**In conclusion, I believe it would best serve the public interest to grant amateurs licensed General class and higher use of the proposed 5.25-5.4 MHz band, and to allow the same transmitting power and emission modes as used on other HF bands, with no subband restrictions either by mode of emission or by licence class.**

Respectfully submitted,

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